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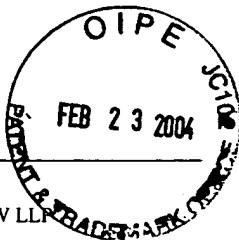
PATENT
Attorney Docket No.: 015280-382100US
Client Ref. No.: E-009-1999/0-US-03

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

On 2-19-04

TOWNSEND and TOWNSEND and CREW LLP

By: Karen Karlin



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MAR 02 2004

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

DEAN et al.

Application No.: 09/856,927

Filed: September 19, 2001

For: A NOVEL ATP-BINDING
CASSETTE PROTEIN RESPONSIBLE
FOR CYTOTOXIN RESISTANCE

Customer No.: 20350

Confirmation No. 6490

Examiner: HUFF, Sheela J.

Technology Center/Art Unit: 1642

Declaration of Michael Dean, Rando

Allikmets, Susan Bates, and Antonio Fojo

pursuant to 37 C. F. R. §1.131

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

We, Michael Dean, Rando Allikmets, Susan Bates, and Antonio Fojo, being duly warned that willful false statements and the like are punishable by fine or imprisonment or both, under 18 U.S.C. §1001, and may jeopardize the validity of the patent application or any patent issuing thereon, state and declare as follows:

1. All statements herein made of our own knowledge are true and statements made on information or belief are believed to be true. Exhibit I is attached hereto and are incorporated herein by reference.

2. At the time this invention was first conceived, we were employees at the National Cancer Institute, located in Frederick, Maryland. All activities described in this Declaration took place in the United States of America.

3. In accordance with 37 C.F.R. §1.131, we state that we completed the claimed invention in the United States prior to February 5, 1998, which is the priority date for U.S. Patent No. 6,313,277 to Ross *et al.*

4. Attached to this Declaration are Exhibit I, the dates on which have been redacted. All redacted dates are prior to February 5, 1998.

5. Conception of the present invention as well as its reduction to practice are evidenced by Exhibit I, which is a copy of a printout containing the polynucleotide sequence of SEQ ID NO:1 and the corresponding amino acid sequence SEQ ID NO:2 of the present application, both in the full length. The codons for the start and termination of the polypeptide are marked in Exhibit I on pages 1 and 4, respectively.

6. As marked in Exhibit I, the polynucleotide sequence in this printout contains 9 additional nucleotides (circled) that are not present in SEQ ID NO:1. As a result, the amino acid sequence translated from the polynucleotide sequence contains a stretch of 40 amino acid residues (highlighted) that is inconsistent with the 37 amino acids from position 565 to position 601 (inclusive) in SEQ ID NO:2. The remaining portions of the polynucleotide sequence and polypeptide sequence of Exhibit I are identical to the corresponding portions of SEQ ID NO:1 and SEQ ID NO:2, respectively. The inclusion of these 9 extra nucleotides, each a part of a nucleotide doublet, triplet, or quadruplet of the same nucleotide, in the polynucleotide sequence was due to a misreading of the DNA sequencing data. This misreading further led to the incorrect amino acid sequence in the highlighted portion.

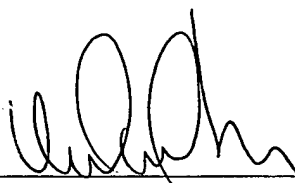
7. The error of including one or more additional nucleotides of the same kind when reading a doublet, triplet, and the like in DNA sequencing data is common, due primarily to the resolution limit of a polyacrylamide sequencing gel. The interpretation of DNA

sequencing data and the subsequent translation of the encoded amino acid sequence, as shown in Exhibit I, were later corrected, when SEQ ID NO:1 and SEQ ID NO:2 were established for the filing of the present application.

8. In light of the foregoing, it is established that Declarants had in their possession the claimed subject matter of the present invention prior to February 5, 1998.

9. Declarants have nothing further to say.

Dated: 11/30/04

By: 
Michael Dean, Ph.D.

Dated: _____

By: _____
Rando Allikmets, Ph.D.

Dated: _____

By: _____
Susan Bates, Ph.D.

Dated: _____

By: _____
Antonio Fojo, Ph.D.

TOWNSEND and TOWNSEND and CREW LLP
Two Embarcadero Center, Eighth Floor
San Francisco, California 94111-3834
Tel: 415-576-0200
Fax: 415-576-0300
Attachments (Exhibit I: redacted copy of sequencing results)
60075067 v1

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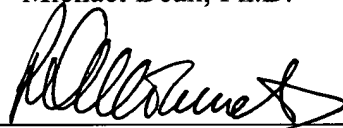
8. In light of the foregoing, it is established that Declarants had in their possession the claimed subject matter of the present invention prior to February 5, 1998.

9. Declarants have nothing further to say.

Dated: _____

By: _____
Michael Dean, Ph.D.

Dated: 01/25/2004

By: 
Rando Allikmets, Ph.D.

Dated: _____

By: _____
Susan Bates, Ph.D.

Dated: _____

By: _____
Antonio Fojo, Ph.D.

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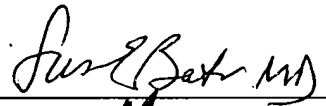
Dated: _____

By: _____
Michael Dean, Ph.D.

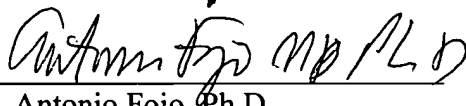
Dated: _____

By: _____
Rando Allikmets, Ph.D.

Dated: _____

By:  _____
Susan Bates, M.D.

Dated: _____

By:  _____
Antonio Fojo, Ph.D.
M.D.

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60075067 V1

(Linear) MAP of: 4464.Seq check: 4209 from: 1 to: 2728

From: FCRFV1::ALLIKMET

"RANDO ALLIKMETS"

16:10:24.34

To: DEAN

CC:

Subj:

4464 plac clone marathon long fragment forward seq

With 1 enzymes: ECORI

16:12 ..

```
1 TTTAGGAACGCACCGTGCAATGCTTGGTGGTCTTGTAAAGTGGAACTGCTGCTTTAGA
  -----+-----+-----+-----+-----+-----+-----+-----+ 60
  AATCCTTGCGTGGCACGTGTACGAACCAACAGAACATTACCTTTGACGACGAATCT
a   F R N A P C T C L V V L L S G N C C F R -
61 GTTTGTTTGGAGGTCCGGGTGACTCATCCCAACATTTACATCCTTAATTGTTAAGCGC
  -----+-----+-----+-----+-----+-----+-----+-----+ 120
  CAACAAACCTTCCAGGCCCACTGAGTAGGGTTGTAAATGTAGGAATTAACAATTTGCGC
a   V C L E G P G D S S Q H L H P * L L K R -
121 TGCCTCCGAGCGCACGCATCCTGAGATCCTGAGCCTTTGGTTAAGACCGAGCTCTATTAA
  -----+-----+-----+-----+-----+-----+-----+-----+ 180
  ACGGAGGCTCGCGTGCCTAGGACTCTAGGACTCGGAACCAATTCTGGCTCGAGATAATT
a   C L R A H A S * D P E P L V K T E L Y * -
      START
181 GCTGAAAGATAAAACTCTCCAGATGCTTCCAGTAATGTCGAAGTTTTTATCCCAAGTG
  -----+-----+-----+-----+-----+-----+-----+-----+ 240
  CGACTTTTCTATTTTGGAGAGGTCTACAGAAGGTCATTACAGCTTCAAAATAGGGTCAC
a   A E K I K T L Q M S S S N V E V F I P V -
241 TCACAAGGAACACCAATGGCTTCCCCGCGACAGTTTCCATGACCTGAAGGCATTTACT
  -----+-----+-----+-----+-----+-----+-----+-----+ 300
  AGTGTTCCTTTGTGGTTACCGAAGGGGCGCTGTCAAGGTTACTGGACTTCCGTAAATGA
a   S Q G N T N G F P A T V S N D L K A F T -
      Y
301 GAAGGAGCTGTGTTAAGTTTTCATACATCTGCTATCGAGTAAACTGAAGAGTGGCTTT
  -----+-----+-----+-----+-----+-----+-----+-----+ 360
  CTTCTCGACACAATTCAAAGTATTGTAGACGATAGCTCATTTTGACTTCTACCGAAA
a   E G A V L S F H N I C Y R V K L K S G F -
361 CTACCTTGTCGAARACCAAGTTGAGAAAGAATATTATCGAATATCAATGGGATCATGAAA
  -----+-----+-----+-----+-----+-----+-----+-----+ 420
  GATGGAACAGCTTTTGGTCAACTCTTTCTTTATAATAGCTTATAGTTACCCTAGTACTTT
a   L P C R K P V E K E I L S N I N G I M K -
421 CCTGGTCTCAACGCCATCCTGGGACCCACAGGTGGAGGCAATCTTCGTTATTAGATGTC
  -----+-----+-----+-----+-----+-----+-----+-----+ 480
  GGACCAGAGTTGCGGTAGGACCTGGGTGTCCACCTCCGTTTAGAAGCAATAATCTACAG
a   P G L N A I I G P T G G G K S S L L D V -
```

TTAGCTGCAAGGAAGATCCAAGTGGATTATCTGGAGATGTTCTGATAAATGGAGCACCG
481 -----+-----+-----+-----+-----+-----+-----+-----+-----+ 540
AATCGACGTTTCTTTCTAGGTTTACCTAATAGACCTCTACAAGACTATTTACCTCGTGGC
a L A A R K D P S G L S G D V L I N G A P -
CGACCTGCCAATTTCAATGTAATTCAGGTTACGTGGTACAGATGATGTTGTGATGGGC
541 -----+-----+-----+-----+-----+-----+-----+-----+-----+ 600
GCTGGACGGTTAAGTTTACATTAGTCCAATGCACCATGTTCTACTACAACACTACCCG
a R P A N F K C N S G Y V U Q D D V V M G -
ACTCTGACGGTGAGAGAAACTTACAGTTCTCAGCAGCTCTTCGGCTTGCAACAACATG
601 -----+-----+-----+-----+-----+-----+-----+-----+-----+ 660
TGAGACTGCCACTCTCTTTTGATGTCAAGAGTCGTGAGAGCCGACGTTGTTGATAC
a T L T V R E N L Q F S A A L R L A T T M -
ACGAATCATGAAAAAACGAACGGATTACAGGGTcattgaagagttaggtCTGGATAAA
661 -----+-----+-----+-----+-----+-----+-----+-----+-----+ 720
TGCTTAGTACTTTTTTTGCTTGCCTAATTGTCCAgtaacttctcaatccaGACCTATTT
a T N H E K N E R I N R V I E E L G L D K -
GTGGCAGACTCCAAGGTTGGAACCTCAGTTTATCCGTGGTGTGTCTGGAGGAGAAAGAAA
721 -----+-----+-----+-----+-----+-----+-----+-----+-----+ 780
CACCGTCTGAGGTTCCACCTTGAGTCAATAGGCACCACACAGACCTCCTCTTTCTTT
a V A D S K V G T Q F I R G V S G G E R K -
AGGACTAGTATAGGAATGGAGCTTATCACTGATCCTTCCATCTTGTCTTGGATGAGCCT
781 -----+-----+-----+-----+-----+-----+-----+-----+-----+ 840
TCCTGATCATATCCTTACCTCGAATAGTGACTAGGAAGGTAGAACAGGAACCTACTCGGA
a R T S I G M E L I T D P S I L S L D E P -
ACAACTGGCTTAGACTCAGCACAGCAATGCTGTCCTTTTGCTCCTGAAAGGATGTCT
841 -----+-----+-----+-----+-----+-----+-----+-----+-----+ 900
TGTTGACCGAATCTGAGTTCGTGTCGTTTACGACAGGAAACGAGGACTTTTCTACAGA
a T T G L D S S T A N A V L L L L K R M S -
AAGCAGGGACGAACAATCATCTTCTCCATTTCATCAGCCTCGATATTCCATCTTCAAGTTG
901 -----+-----+-----+-----+-----+-----+-----+-----+-----+ 960
TTCGTCCCTGCTTGTTAGTAGAAGAGGTAGTAGTCGGAGCTATAAGGTAGAGTTCAAC
a K Q G R T I I F S I H Q P R Y S I F K L -
TTTGATAGCCTCACCTTATTGGCCTCAGGAAGACTTATGTTCCACGGGCCTGCTCAGGAG
961 -----+-----+-----+-----+-----+-----+-----+-----+-----+ 1020
AAACTATCGGAGTGGAATAACCGGAGTCCTTCTGAATACAAGGTGCCCAGGACGAGTCCTC
a F D S L T L L A S G R L M F H G P A Q E -
GCCTTGGGATACTTTGAATCAGCTGGTATCACTGTGAGGCCTATAATAACCTGCAGAC
1021 -----+-----+-----+-----+-----+-----+-----+-----+-----+ 1080
CGGAACCTATGAACCTTAGTCGACCAATAGTGACACTCCGGATATTATTGGGACGTCTG
a A L G Y F E S A G Y H C E A Y N N P A D -

1081 TTCTTCTTGGACATCATTAAATGGAGATTCCACTGCTGTGGCATTAAACAGAGAAGAAGAC
-----+-----+-----+-----+-----+-----+ 1140
AAGAAGAACCTGTAGTAATTACCTCTAAGGTGACGACACCGTAATTTGTCTCTTCTTCTG
a F F L D I I N G D S T A V A L N R E E D -
TTTAAGCCACAGAGATCATAGAGCCTTCCAAGCAGGATAAGCCACTCATAGAAAATTA
1141 -----+-----+-----+-----+-----+-----+ 1200
AAATTTCCGGTGTCTCTAGTATCTCGGAAGGTTCTGCTATTCCGGTGAGTATCTTTTTAAT
a F K A T E I I E P S K Q D K P L I E K L -
GCGGAGATTTATGTCAACTCCTCCTTCTACAAGAGACAAAAGCTGAATTACATCAACTT
1201 -----+-----+-----+-----+-----+-----+ 1260
CGCCTCTAATACAGTTGAGGAGGAAGATGTTTCTCTGTTTTCGACTTAATGTAGTTGAA
a A E I Y V N S S F Y K E T K A E L H Q L -
TCCGGGGGTGAGAAGAAGAAGAAGATCACAGTCTTCAAGGAGATCAGCTACACCACCTCC
1261 -----+-----+-----+-----+-----+-----+ 1320
AGGCCCCCACTCTTCTTCTTCTTCTAGTGTGAGAGTTTCTCTAGTCGATGTGGTGGAGG
a S G G E K K K K I T V F K E I S Y T T S -
TTCTGTCACTCAACTCAGATGGGTTTCCAAGCGTTCATTCAAAAACCTTGCTGGGTAAATCCC
1321 -----+-----+-----+-----+-----+-----+ 1380
AAGACAGTAGTTGAGTCTACCCAAGGTTGCAAGTAAGTTTTTGAACGACCCATTAGGG
a F C H Q L R W V S K R S F K N L L G N P -
CAGGCCTCTATAGCTCAGATCATTGTCACAGTCGTAAGTGGGACTGGTTATAGGTGCCATT
1381 -----+-----+-----+-----+-----+-----+ 1440
GTCCGGAGATATCGAGTCTAGTAACAGTGTGAGCATGACCTGACCAATATCCACGGTAA
a Q A S I A Q I I V T V V L G L V I G A I -
TACTTTGGGCTAAAAAATGATTCTACTGGAATCCAGAACAGAGCTGGGGTTCTCTTCTTC
1441 -----+-----+-----+-----+-----+-----+ 1500
ATGAARCCCGATTTTTTACTAAGATGACCTTAGGTCTTGTCTCGACCCCAAGAGAAGAG
a Y F G L K N D S T G I Q N R A G V L F F -
CTGACGACCAACCAAGTGTTCAGCAGTGTTCAGCCGTGGAACTCTTTGTGGTAGAGAAG
1501 -----+-----+-----+-----+-----+-----+ 1560
GACTGCTGGTTGGTCACAAAGTCGTACAAAGTGGGCACCTTGAGAACACCATCTCTTC
a L T T N Q C F S S V S A V E L F V V E K -
AAGCTCTTCATACATGAATACATCAGCGGATACTACAGAGTGTGATCTTATTTCCCTTGG
1561 -----+-----+-----+-----+-----+-----+ 1620
TTCGAGAAGTATGTACTTATGTAGTCGCCTATGATGTCTCACAGTAGAATAAGGARACCT
a K L F I H E Y I S G Y Y R V S S Y F L G -
AAACTGTTATCTGATTTATTACCCATGAGGATGTACCAAGTATTATATTACCTGTATA
1621 -----+-----+-----+-----+-----+-----+ 1680
TTTGACAATAGACTAATAATGGGTACTCCTACATGTTTCATAATATAAATGGACATAT
a K L L S D L L P M R M L P S I I F T C I -

1681 GTGTACTTCATGTTAGGATTGAAGCCAAAGGCAGATGCCTTCTTCGTTATGATGTTTACC
-----+-----+-----+-----+-----+-----+-----+-----+-----+ 1740
CACATGAAGTACAATCCTAAGTTTGGGTTTCCGTCTACGGAAGAGCAATACTACAAATGG
a V Y F M L G L K P K A D A F F V M M F T -
CTTATGATGGTGGCTTATTCAGCCAGTTCCATGGCACTGGCCATAGCAGCAGGTCAGAGT
1741 -----+-----+-----+-----+-----+-----+-----+-----+ 1800
GAATACTACCACCGAATAAGTCCGGTCAAGGTACCGTGACCGGTATCGTCGTCAGTCTCA
a L M M V A Y S A S S M A L A I A A G Q S -
GTGGTTTCTGTAGCAACACTTCTCATGACCATCTGTTTGTGTTTATGATGATTTTTTCA
1801 -----+-----+-----+-----+-----+-----+-----+-----+ 1860
CACCAAGACATCGTTGTGAAGAGTACTGGTAGACAAACACAATACTACTAAAAAAGT
a V V S V A T L L M T I C F V F M M I F S -
GGTCTGTTGGTCAATCTCACAACCATTCATCTTGGGCTGTCATGGGCTTCAGTACTTCA
1861 -----+-----+-----+-----+-----+-----+-----+-----+ 1920
CCAGACAACCAAGTTAGAGTGTGGTAACGTAGAACCCGACAGTACCCGAAGTCATGAAGT
a G L L V N L T T I A S W A V M G F S T S -
GCATTCCACGGATATGGGATTTACGGGCTTTGCAGGCATAAATGAATTTTTGGGACAAAA
1921 -----+-----+-----+-----+-----+-----+-----+-----+ 1980
CGTAAGGTGCCTATACCCTAATGCCCGAACGTCCTATTCTTAAARACCTGTTTT
a A F H G Y G I Y G L C R H K * I F G T K -
CTTCTGCCCAGGACTCAATGCAACAGGAACATCCCTTGTAAGTATGCAACATGTACT
1981 -----+-----+-----+-----+-----+-----+-----+-----+ 2040
GAAGACGGGGTCTCGAGTTACGTTGTCTTTGTTAGGGAACATTGATACGTTGTACATGA
a L L P Q D S M Q Q E T I P C N Y A T C T -
GGCGAAGAATATTTGGTAAGCAGGGCATCGATCTCTCACCCTGGGGCTTGTGGAGAAT
2041 -----+-----+-----+-----+-----+-----+-----+-----+ 2100
CCGCTTCTTATAAACCATTTTCGTCCCGTAGCTAGAGAGTGGGACCCCGAACACCTTCTTA
a G E E Y L V K Q G I D L S P W G L W K N -
CACGTGGCCTTGGCTTGTATGATTGTTATTTTCTCACAATTGCCTACCTGAATTTGTTA
2101 -----+-----+-----+-----+-----+-----+-----+-----+ 2160
GTGCACCGGAACCGAACATACTAACAATAAAGGAGTGTAAACGGATGGACTTTAACAAT
a H V A L A C M I V I F L T I A Y L K L L -
TTTCTTAAAAAATATTCTTAAATTTCCCTTAATTCAGTATGATTTATCCTCACATAAAA
2161 -----+-----+-----+-----+-----+-----+-----+-----+ 2220
AAGAAATTTTTTATAAGAATTTAAGGGGAATTAAGTCATACTAATAGGAGTGTATTTT
a F L K K Y S * I S P * F S M I Y P H I K -